RAPID RESPONSE FRAMEWORK FOR INVASIVE SPECIES

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SCOPE AND PURPOSE

This document is intended to serve as an aid to resource managers who are responsible for responding to newly discovered invasive species infestations. It has been prepared not just for government agency staff but also for anyone who has responsibility for managing lands or other resources that can be harmed by invasive species. It cannot, and does not attempt to, provide answers or solutions to all of the issues associated with rapid responses. Rather, this document provides a framework to assist any manager in responding thoroughly, professionally and effectively to the many challenges that result from new invasions.

Early detection of new invasions is critical to any rapid response. The value of rapid response is realized only if populations are identified when they are small and manageable. To be most effective, a response to a new introduction should occur quickly. Note that the term "quickly" is subject to the biology and context of each individual invasion. In many cases, the initial stages of rapid response are measured in hours and days, not weeks or months. Conversely, a rapid response could continue for years when a species spreads slowly and can be effectively contained.

We purposefully did not prepare detailed "response plans" for individual species that have not yet invaded because responses must be guided by case-specific facts. In other words, how a species invades – how many individuals, their distribution on the landscape, proximity to other known invasions, the time of year, nearby land use, and numerous other factors – determines what actions are possible and useful. Instead of pre-determined plans, we chose to rely upon an established process to guide decision-making and response actions for species invasions anywhere in the state. We encourage pre-planning efforts for future invasions, but have also learned that there is a limit to the level of response planning that is useful until an invasion actually occurs. For example, an understanding of possible actions (and real constraints) is very helpful in advance of an invasion. Similarly, establishing communication networks with potential partners and stakeholders can be useful.

The process that we have selected ensures that managers give attention to all of the necessary components of an effective response: coordination, communication, public outreach, planning, science, information management, laws and regulations, resources and logistics. As an example, one of the first steps following verification of any invasion is to plan and implement a "delimitation" survey to determine the geographic extent of the invasion. Whereas a single or very limited invasion may lend itself to complete elimination of the invading population, invasions at numerous locations over a wide area may preclude eradication and allow only for a strategy of spread prevention. The wide range of possible conditions has a correspondingly wide range of possible response actions. They range from the removal of infested and potential hosts to outreach and regulatory efforts, such as quarantines and inspections that are intended to reduce or eliminate the movement of infested materials away from the invaded area. These decisions cannot be made until survey information is available.

Our experiences with snakehead fish, chronic wasting disease (CWD), hydrilla, oak wilt, Asian longhorned beetle (ALB), and emerald ash borer (EAB) in New York State have been used to help develop and refine this framework.

THE RAPID RESPONSE PROCESS

Early Detection & Reporting **-** The most critical step in addressing a new invasive species is to know that it exists. The early detection of new invasions is key and frequently requires a network of well-trained volunteers and professionals who can carry out field surveys, reporting, and when necessary, specimen collection for identification.

The rapid response process begins once a potentially new invasion has been reported to an agency (e.g., state or federal resource agencies, public land managers) or organization (e.g., Partnerships for Regional Invasive Species Management (PRISMs), private land managers) whose mission includes responding to invasions.

Verification **-** The rapid and accurate identification of a new invasive species is an important first step. Suspected sample(s) must be verified by a recognized expert or accredited laboratory before action can be taken. Samples should be vouchered to authenticate suspected sample(s) with physical evidence.

Notification **-** Relevant resource managers should be notified once the reported invasion has been verified. Notification of the news media and the public should occur once the initial verification has been confirmed by a second source.

Rapid Assessment **-** Once a new invasion has been verified, a rapid assessment needs to be completed to determine both the threat(s) posed by the invasion and the potential for an effective rapid response. The first step in a rapid assessment is delimiting the physical extent of the invasion. Another important step is an assessment of the resources (personnel, funds, equipment, supplies, etc.) needed to address the invasion. The rapid assessment will ultimately determine whether responsible agencies or organizations should attempt spread prevention, eradication, control, or no action.

Planning **-** Once a rapid response action has been determined, planning is needed to address roles and responsibilities, coordination, internal and external communications, marshalling resources, spread prevention, decision-making, and implementation. In most instances, a written response plan should be prepared. Such plans can include information from management plans, recommended practices, site conservation plans, and standards and guidelines.

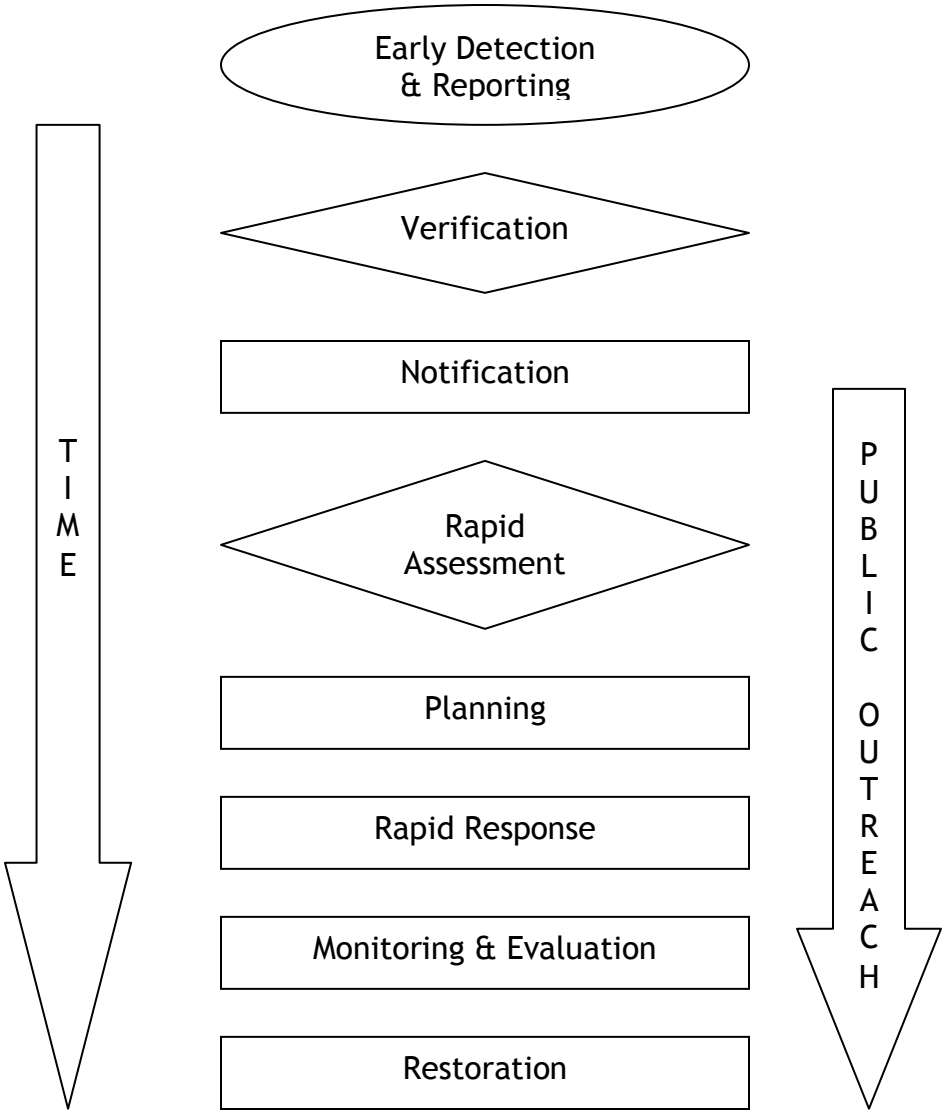
Rapid Response **-** Rapid response is an action or series of actions taken to quickly contain, and if possible, eradicate newly discovered invaders. In some instances, eradication may not be possible, so control or management is the only option.

Monitoring & Evaluation **-** A rapid response is not complete after a management action has been taken. Monitoring after a response is important to determine if management actions were effective. At a minimum, monitoring efforts should focus on treated areas, but should also include adjacent high risk areas when possible. Monitoring results can indicate the need for repeated or additional response actions. Finally, feedback on the

efficacy of response actions and the effectiveness of the Rapid Response Plan will enhance long-term preparedness for response to other invasive species introductions.

Restoration **-** Once a response effort is complete, it may be necessary to restore disturbed areas to their natural ecological function. Restoration efforts would typically utilize native species whenever possible to help restore ecosystem resiliency and guard against future re-infestations.

The Rapid Response Process



HOW TO USE THIS DOCUMENT

This document is operational in nature; therefore, the activities outlined below focus on actions that would follow a confirmed introduction. The actions are arranged in the order they should be performed; however, some activities may or should be implemented simultaneously. Some of the tasks identified may already be ongoing, while others will need to be implemented quickly following review and approval. Not all items in this document will be relevant to all invasions. Nevertheless, managers should consider each item as they proceed to plan and implement responses to new invasions.

Successful implementation of this document requires resource managers who are willing to aggressively respond to the particular circumstances of a new infestation. Ideally, this guidance will prompt improvements in response timing, organizational development, permitting efficiencies, funding mechanisms, outreach strategies, and other tools that in turn will allow this document to evolve further over time.

VERIFICATION

Who The individual/organization who receives and accepts responsibility for handling the initial report in coordination with the state, tribal, provincial, and/or federal agency where the initial sighting occurs.

Why The objectives are to confirm the accuracy of the report, determine the condition (age, reproductive status, vigor, etc.) of the sample, and ensure that everyone is handling reports consistently and judiciously.

How

1. Interview the reporter(s) to validate detection.

    a. Record details of the location such as: County, Township, City/Village, name of water body, land unit area, landmarks, highway mile, and land ownership where the suspect invader was found. Get GPS coordinates if possible.

    b. Collect contact information from the reporter(s).

    c. Secure an estimate of the number of the individuals found and the extent of the infestation.

    d. Obtain a digital or other photograph (with scale indicator), if possible.

    e. Secure a sample, if possible.

    f. Document the date and time of sighting(s).

    g. Note other relevant conditions (access limitations, etc.)

2. Validate identification as soon as possible via examination of a physical sample.

    a. When feasible, arrange for a site visit by at least one recognized expert (preferably a small team).

    b. If recognized experts cannot feasibly reach the site within a reasonable time frame, arrange to have samples and/or other evidence (e.g., photographs) sent via express mail service to the most accessible recognized expert.

    c. Prior to shipping samples, obtain guidelines from recognized experts (and use any existing protocols) regarding handling of the sample, desired quantity, where and how to deliver the sample, etc.

NOTIFICATION

Who The individual/organization who accepts the responsibility to verify and confirm the accuracy of the initial report.

Why The objectives are to ensure that all parties that may affect a response decision are quickly engaged and to rapidly inform all other interested parties.

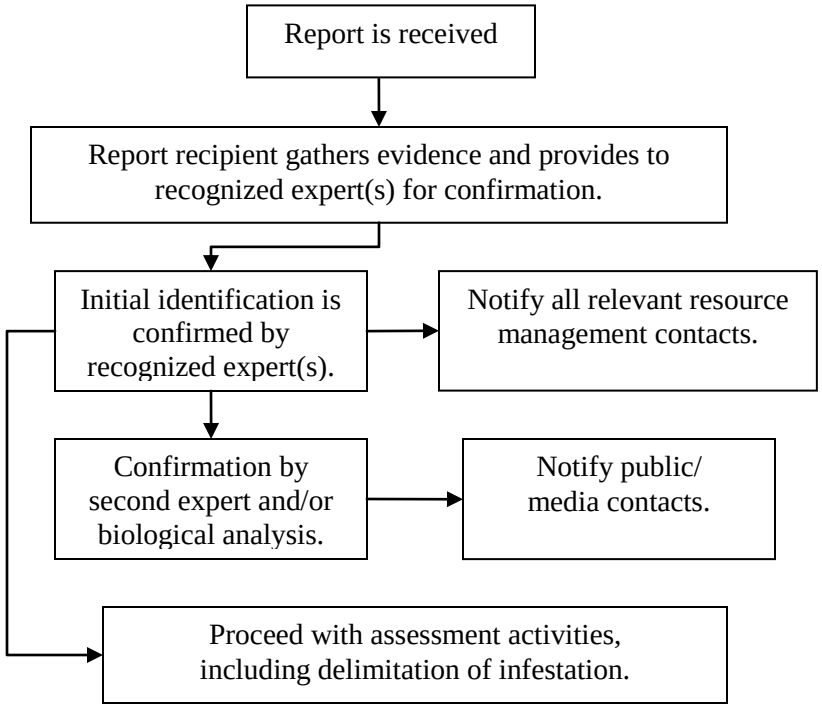
How

1. Within the first 24 hours, or as soon as practical after a physical sample is visually confirmed to be an invasive species by a recognized expert, notify all relevant natural resource managers in Table 1 below. Note that for many organizations, only primary contacts will be notified. Those primary contacts will then be responsible for further internal notification within their organization (i.e., a primary contact for a state agency would be responsible for contacting other key officials within their state agency).

2. Secure verification of notifications to confirm that all relevant contacts did, in fact, receive notification (e.g., Internet list server response confirmation requirement, phone list call-backs, etc.).

3. While proceeding with subsequent response activities described below, obtain a definitive confirmation of the invasive species via a second expert(s) and/or a biological analysis. Note that the general public/media notification (Table 2 below) should not occur until after the second confirmation is achieved.

The Notification Process



4. Disseminate information on definitively confirmed invasions through an easily accessible database and list serve (e.g., iMap Invasives).

The following tables are not comprehensive but provide an initial set of contacts. They presume the identified individuals will directly make further contacts within their organizations. Contact only necessary agencies and organizations.

Table 1. PRIORITY 1 CONTACTS
(Notify within 24 hours of **initial** confirmation or as soon as practical)

State Agencies
NYS Department of Environmental Conservation
- Office of Invasive Species Coordination - Central Office
- Division of Lands and Forests - Regional Office
- Division of Fish and Wildlife - Regional Office
- Division of Public Affairs and Education - Regional Office

NYS Department of Agriculture and Markets
NYS Office of Parks, Recreation and Historic Preservation
NYS Department of Transportation
NYS Canal Corporation
NYS Thruway Authority

Others
Any agencies and partners deemed appropriate from Table 2.

Table 2. PRIORITY 2 CONTACTS
(Notify within 24 hours of **second** confirmation or as soon as practical)

State Agencies
NYS Department of State (DOS)
Adirondack Park Agency (APA)
NYC Department of Environmental Protection (DEP)

Federal Agencies
US Department of Agriculture (USDA)
- APHIS
- Forest Service - Northeastern Area Office
- Natural Resource Conservation Service

National Oceanic and Atmospheric Administration (NOAA)
- National Estuarine Research Reserve System (NOAA - NERRS)
- National Marine Fisheries Service (NOAA - Fisheries Service)
- National Marine Sanctuaries (NOAA – NMS)
- National Sea Grant (NOAA – Sea Grant)

National Park Service (NPS)
US Army Corps of Engineers (COE)
US Coast Guard (USCG)
US Environmental Protection Agency (USEPA)
- National Estuary Program (USEPA – NEP)

US Fish and Wildlife Service (USFWS)

Table 2. PRIORITY 2 CONTACTS
(Notify within 24 hours of **second** confirmation or as soon as practical)

US Geological Survey (USGS)

Local Government
Town Supervisor
Mayor
Other key elected officials

Non-Government Organizations (NGOs)
Adirondack Council
Adirondack Mountain Club (ADK)
Association of Landscape Architects
Audubon NY
Cary Institute of Ecosystem Studies
Catskill Center for Conservation and Development
Cornell Cooperative Extension
Cornell University, Department of Natural Resources
Empire State Forest Products Association
Empire State Marine Trades Association
Lake Champlain Basin Program (LCBP)
Local Lake Associations
Native American Tribes
NY Association of Conservation Districts
NY Farm Bureau
NY Forest Owners Association
NY Sea Grant
NYS Association of Towns
NYS Conservation Council
NYS Flower Industries, Inc.
NYS Forest Owners Association
NYS Nursery and Landscape Association
NYS Turfgrass Association
NYS Urban & Community Forestry Council
PRISM (Partnerships for Regional Invasive Species Management)
Protect the Adirondacks
SUNY College of Environmental Science and Forestry
The Nature Conservancy (TNC)
Wildlife Society (NYS Chapter)
Other key constituents

Media
Local Newspapers
Local Television Stations
Local Radio Stations
Other local media outlets

RAPID ASSESSMENT

Step I – Delimiting Invasion

Who The appropriate lead agency with authority where the initial sighting(s) occurred, in partnership with federal, state and local governments as well as non-government organizations.

Why The objective is to rapidly provide information to guide subsequent management decisions, including survey design.

How

1. Determine the geographic extent of the infestation. The Incident Command System (ICS) may be used depending on the size of the area to be surveyed and the resources needed. ICS is a standardized organizational and operational structure for managing emergency responses, and integrating and coordinating multiple organizations and agencies. Survey efforts should follow existing regional or national protocols.

2. Determine demography of infestation (e.g., age structure). These efforts should follow existing regional or national protocols. Where possible, surveys should assess maturity and reproduction condition of the infested site(s).

3. Identify and survey nearby facilities, habitats or resources (e.g., campgrounds, wetlands, beaches, etc.) that are especially vulnerable to invasion.

4. Identify any nearby facilities, habitats or resources (e.g., nearest known population, ports, terminals, boat launches, railheads, vendors, etc.) that could serve as a source or pathway of invasion.

5. Ensure that field surveys are completed and the results are reported using agreed upon methods.

6. Identify threat(s) to the State's economic, ecological, and recreational resources.

7. Determine if financial resources are available for response activities.

Step II – Defining Roles and Responsibilities

Who Lead Agency/Organization, as defined below.

Why The objective is to activate a predetermined response management system that expedites decision-making, information sharing, avoids duplication, and minimizes authority conflicts, while preserving flexibility for adaptive management.

How

1. The appropriate Lead Agency or organization with authority where the initial sighting(s) occurred convenes a meeting of all relevant managers and selects a Management Team and Lead Coordinator. At a minimum, this meeting should involve all organizations that have jurisdiction within the infestation area. The Management Team will assess the risk and analyze all potential management options. The Lead Coordinator will coordinate all management activities. Note that the Lead Coordinator will not be the primary decision-maker or have veto power regarding response strategies; he or she simply will serve as a primary point-of-contact for resolving coordination and logistical problems. Response actions within the boundary of lands, waters, or structures owned/administered by a particular individual, organization, or jurisdiction will be overseen by that owner/administrator unless they concede responsibility to another entity.

The Management Team will:

   a. Determine the extent of the infestation and pathways for potential spread.

   b. Determine the risk to the environment, human health, economy, etc.

   c. Identify constrains and limitations, including jurisdictional issues, legislative authority, funding, permitting, personnel training, access to private lands, gaps in knowledge, and ecological uncertainties.

   d. Determine if eradication/control is possible and select the appropriate method(s) to be employed.

The Lead Coordinator will:

   a. Coordinate interagency "response team" notification operations.

   b. Facilitate creation of a response management system involving lead representatives of each local, tribal, state, provincial, and/or federal government that has legal authority over the response.

   c. Represent (i.e., be the spokesperson for) the Management Team.

   d. Facilitate a collaborative decision-making process that considers cascading levels of authority within individual agencies.

   e. Facilitate development of response priorities.

2. The above actions should take into account the roles, relationships, and inter-agency agreements among:

   a. All affected states (e.g., Governor, state agencies, ANS Coordinator, etc.)

   b. Federal agencies (e.g., USFWS, USDA, NOAA , USACOE, etc.)

c. Canada

d. Tribes

e. Local governments

f. Other interested parties, such as NGOs, universities, nurseries, marinas, etc.

3. The local response team should draw upon technical experts from outside the region to help advise response operations when appropriate.

Step III - Planning Internal and External Communications

Who Lead Coordinator

Why The objective is to develop a joint information center to ensure consistent and effective communication to resource managers and interested external stakeholders, including the media and public.

How

1. Notify and educate the affected landowners, and where appropriate, secure written permission to gain access to their properties for response activities.

2. Notify and educate potentially affected landowners and other users.

3. Develop a response management system as needed. The Incident Command System (ICS) may be used depending on the size and type of response needed.

4. Develop a public information strategy (consider a formal, written plan) including: press releases, information packets, and public meetings. Provide information to affected publics as early as possible. Ideally, public outreach should begin before response decisions are made. Key messages should include: 1) being a "host community" to an invasion is a burden; 2) the risks from the invasion; 3) the available response options; 4) the considerations to be used in decision-making; and 5) the process forward.

The public information/participation strategy should:

a. Identify who the various interests are that may be affected based on the early identification of issues. Examples include:
   - Individuals or groups known to be affected;
   - People who may be affected and people who think they may be affected; and
   - People whose support is needed.

b. Establish and maintain two-way communication between management team and identified interests. State how staff will maintain on-going communication with identified interests using frequent telephone calls, email, work sessions and one-on-one meetings.

c. Draft press releases to announce significant events and progress.

d. Conduct a public scoping session/informational meeting to present the problem and identify issues.

e. Summarize information and comments gathered at public scoping and other meetings and write responses to the comments.

5. Develop and implement general public education and outreach. In situations where a variety of educational materials exist, ensure coordination and agreement on which materials will be used.

Step IV - Marshalling Resources

Who Lead Coordinator in partnership with all other involved organizations

Why The objective is to provide sufficient resources (personnel, equipment, materials, contractors, funding) to initiate control actions and associated activities, including acquisition of required permits.

How

1. Develop estimates for staffing needs, facilities and equipment, and funding.

2. Identify potential sources for staffing, facilities, equipment, and funds.

3. Secure commitments for needed staff, facilities and equipment, and funds.

4. Ensure mechanism for dispersal of funds is in place, and when funds are needed, the flow of dollars occurs expeditiously.

Step V – Preventing Spread

Who Lead Coordinator and Management Team

Why The objective is to minimize all vectors that might further spread the original infestation.

How

1. Identify dispersal vectors (including movement by humans, fish and wildlife, water traffic, water flow, and other physical processes) and pathways and evaluate associated risks.

2. Restrict dispersal pathways where feasible, including:

    a. Quarantine infested areas as needed to prevent spread.

    b. Assess the likely movement of infested vehicles, equipment, and materials to identify risk and inspection needs at other vulnerable areas.

    c. Establish wash and inspection requirements on vehicles and equipment, if needed.

    d. If feasible, determine and eliminate the likely source of inoculation (e.g., infested firewood) as warranted.

    e. Ensure that invasive species "alert" signs are adequately deployed.

    f. Begin outreach to alert the public of the risks of spreading the new infestation.

    g. Develop and implement Hazard Analysis and Critical Control Point (HACCP) plans to ensure that response personnel do not further spread the original infestation. Work with Joint Information Center (see RAPID ASSESSMENT Step III – Planning Internal and External Communications) to design and implement educational outreach programs using print, electronic media and other avenues.

    h. Install physical barriers, if needed.

PLANNING

Step I – Exploring Alternatives

Who Lead Coordinator and Management Team

Why The objective is to evaluate all the available information and then decide which response action (eradication or containment/mitigation) and which management action (hand-pulling, dredging, herbicide, etc.) is appropriate.

How

1. Decide if eradication is possible based on rapid analysis of specific nature of invasion, including population dynamics and pathways of spread. Consider the following:

    a. Risk to environment, human health, economy, etc.

    b. Anticipated cost of eradication effort (relative to available funding).

    c. Available resources (personnel, equipment, etc.).

    d. Distribution – single vs. multiple, continuous vs. patchy, isolated vs. widespread.

    e. Landscape context – upstream vs. downstream, edge vs. interior, etc.

    f. Age of infestation.

    g. Neighbors' actions/inaction.

    h. Other available management or response plans.

    i. Pathways/source – identified, controlled, eliminated, etc.

    j. Species track record of eradication/control.

    k. Survey and assessment confidence.

    l. Habitat type(s).

    m. Life stage(s) present.

    n. Time of year in relation to reproduction, migration, etc.

    o. Land ownership – public vs. private, willing landowner vs. unwilling landowner.

p. Amount of water in the system to be treated. Consider the following:

1) Potential for drawn down or flows reduced before treatment.
2) Flow sources, including springs, and the potential to regulate that flow.

q. Land use patterns.

r. Presence of state or federally listed rare, threatened or endangered species.

s. Presence of critical or significant habitats.

t. Special status, including:

1) Water use designation (e.g., drink water)
2) Wild, Scenic or Recreational River designation
3) Forest Preserve lands
4) Adirondack or Catskill Park lands
5) Wilderness
6) Historic sites
7) Cultural resources
8) Department of Defense or other restricted access areas
9) Tribal lands

u. Other considerations.

2. Consider potential management actions.

a. Terrestrial Systems

1) Physical/Mechanical Activities

Hand-pulling
Trapping/Netting/Capturing
Burning/Prescribed Fire
Shooting/Depopulation
Flooding
Cutting/Chopping/Mowing
Burying
Excavating/Digging
Physical Barriers (creation & removal)
Cultivation
Grazing

2) Biological Activities (Biocontrols)

Insects

Mammals
Micro-organisms

3) Chemical Activities

Herbicides: Application method (granular, truck spray, hand spray, aircraft, soil drench, stem injection)
Pesticides

4) Regulatory Activities

Statute
Regulation
Policy
Quarantine

b. Aquatic Systems

1) Physical/Mechanical Activities

Hand-pulling
Suction Harvesting
Trapping/Netting/Capturing
Mechanical Harvesting (cutting/mowing)
Benthic Barriers (matting)
Hydroraking/Rotovating
Dredging
Draining/Drawdown
Surface Covers
Physical Barriers (creation & removal)

2) Biological Activities (Biocontrols)

Insects
Mammals
Fish
Micro-organisms

3) Chemical Activities

Herbicides: Contact, Systemic, Shading – chemical dyes
Pesticides

4) Regulatory Activities

Statute
Regulation

Policy
Quarantine

3. Assess potential impacts of management actions. Consider the following:

    a. Air Quality
    b. Soils
    c. Cultural Resources
    d. Water Resources
    e. Fish and Wildlife including threatened, endangered and sensitive species
    f. Human Health
    g. Social Environment
    h. Vegetation diversity including threatened, endangered and sensitive plant species.
    i. Economic Conditions
    j. Visual Resources and Recreation
    k. Effectiveness of various treatment methods.

Step II – Making Decisions

Who Lead Coordinator and Management Team

Why The objective is to seek a decision on which response action (eradication or containment/mitigation) and which management action (hand-pulling, dredging, herbicide, etc.) to undertake.

How

1. Identify decision-makers and observe decision-making protocols. Propose a single course of action or offer alternatives to decision-makers. Brief in writing or in person as needed.

2. Develop a response plan. The response plan ensures that everyone is working in concert toward an agreed upon goals. The plan should provide a coherent means of communicating the overall response objectives in the context of both operational and support activities. At the simplest level, the plan must have the following three elements:

    a. What do we want to do?
    b. Who is responsible for doing it?
    c. How do we communicate with each other?

Step III – Securing Permits

Who Lead Coordinator and Management Team

Why The objective is to satisfy all regulatory requirements, including permits, licenses, certifications, concurrence, etc.

How

1. Consider Commissioner Emergency Order. A formal determination of emergency can facilitate numerous aspects of regulatory processes.

2. Identify all State/Federal regulatory requirements, including any applicable emergency provisions. A partial list of State/Federal permits and regulatory reviews that may apply include:

    a. US Army Corps of Engineers Section 10 permit for any work in, over, or under navigable waters of the United States.

    b. US Clean Water Act Section 404 permit from the US Army Corps of engineers for the discharge of dredged or fill material into waters of the United States.

    c. US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 18 authorizes the Environmental Protection Agency (EPA) to allow states to use a pesticide for an unregistered use in the Untied States for a limited time if EPA determines that emergency conditions exist. The uses are requested for a limited period of time (no longer than 1 year), to address the emergency situation only. If the need is immediate, a state agency may issue a crisis exemption that allows the unregistered use for 15 days. Under FIFRA, registrations and product labeling may restrict uses of pesticides. Each registration specifies the plants/sites on which it may be applied. Restricted-use pesticides are limited to use by pesticide applicators who are certified, or to people under supervision of a certified applicator.

    d. US Endangered Species Act Section 7 consultations with the National Marine Fisheries Service (NMFS) for marine and anadromus species, or the U.S. Fish and Wildlife Service (FWS) for fresh-water and wildlife, for any "action" that may affect listed species or their designated habitat in the United States.

    e. NYS Environmental Conservation Law (ECL) Article 15 Aquatic Pesticide permit from DEC for the use of a pesticide to control an aquatic pest in New York State.

    f. NYS Environmental Conservation Law (ECL) Article 15 Protection of Waters permit from DEC for the disturbance of the bed or banks of a protected stream or other watercourse; the construction, reconstruction or repair of dams or other impoundment structures; the construction, reconstruction or expansion of docking and mooring facilities; the excavation or placement of fill in navigable waters and their adjacent contiguous wetlands; and water quality certification for placing fill or

undertaking activities resulting in a discharge to waters of the United States.

g. NYS Environmental Conservation Law (ECL) Article 24 Freshwater Wetlands permit from DEC for any action in or within 100 feet of a mapped wetland in New York State.

h. NYS Environmental Conservation law (ECL) Article 25 Tidal Wetlands permit from DEC for any action in or within 300 feet (150 feet within New York City) of a mapped tidal wetland in New York State.

i. NYS Executive Law Article 27 Freshwater Wetlands permit from the Adirondack Park Agency (APA) for any action in a wetland over one acre in size or any size wetland adjacent to open water within the Adirondack Park of New York State.

j. NYS Environmental Conservation Law (ECL) Article 11 Liberation of Fish and Wildlife permit from DEC for the release of fish, wildlife, insects and other invertebrates in New York State.

k. NYS Environmental Conservation Law (ECL) Article 8 State Environmental Quality Review (SEQR) environmental impact assessment for projects or actions proposed by a state agency or unit of local government, and all discretionary approvals (permits) from NYS agency or unit of local government, in New York State. Emergency permits are a Type II action so are effectively exempt.

l. NYS Environmental Conservation Law (ECL) Article 19 Restricted Burning permit from DEC for burning of land clearing and/or demolition materials consisting of wood, trees, tree trimmings, leaves, or brush, generated by land clearing or demolition for the erection of any structure in New York State.

3. Identify all local regulatory requirements, including any applicable emergency provisions.

4. Identify any cooperative agreements with other agencies/organizations (e.g., MOUs, MOAs, AANRs, etc.).

5. Assign lead person from each regulatory agency to facilitate permit approval in a timely manner within their respective agency.

6. Consult with DEC to determine if an environmental assessment or environmental impact statement is required.

7. Determine timeframe necessary for meeting all regulatory requirements.

RAPID RESPONSE

Who Lead Coordinator and Management Team

Why The objective is to implement the eradication or control strategies.

How

1. Lead Coordinator facilitates implementation of the response plan developed by the Management Team.

2. Continue public outreach efforts. Make sure the public is well informed on response activities and progress by providing information updates as needed.

3. Ensure compliance with emergency rules and regulations, quarantines, or wash and inspection requirements. Identify loop-holes and additional regulatory needs.

4. Agencies collaborate to coordinate and deploy field resources; implement ICS if needed.

5. Management Team monitors eradication/control progress and the impacts of selected methods on the environment and other organisms.

6. Establish a schedule for frequent Management Team meetings to resolve operational issues that cross jurisdictional interests.

7. Adjust eradication/control methods based on new information. Selected methods may be adjusted to improve effectiveness and/or to reduce or minimize impacts.

MONITORING & EVALUATION

Who Lead Coordinator and Management Team

Why The objective is to provide information and data on treatment success and ecosystem recovery.

How

1. Design a monitoring program to evaluate the status of the invasive species population. Monitoring activities should be carried out in coordination with other program field operations.

2. Select ecological indicators and term for monitoring as needed to assess the status and trends in environmental conditions. Potential ecological indicators may include:

    a. Forests
        1) The health of forest plants.
        2) Habitat quality for birds and deer.
        3) Woodland productivity for forest products.

    b. Streams
        1) The chemical characteristics of stream water that help determine how water can be used by plants and animals.
        2) The kind and number of living things, other than fish, in a stream.
        3) The kind, number, and edibility of fish present in the stream.

    c. Landscapes
        1) The environment's ability to provide habitat for different kinds of wildlife, including game and rare species.
        2) The environment's ability to resist and recover from a variety of disturbances.
        3) The environment's ability to filter and maintain water quality, and to reduce flooding.
        4) The diversity and pattern of land cover types (forest, water, agriculture, etc.) and which land cover type is dominant.

3. Disseminate findings through an easily accessible database and list serve (e.g., iMap Invasives).

4. Conduct a follow-up evaluation of response organizations and other interest groups to identify opportunities for improving rapid response capacity. Disseminate "lessons learned" to other interested organizations.

5. Revise the rapid response plan and associated documents/guidelines based on evaluation and long-term monitoring results.

6. Determine the need for long-term funding for the current management effort and seek funding as warranted.

RESTORATION

Who Management Team/Lead Coordinator.

Why The objective is to restore disturbed areas back to their natural ecological function.

How

1. Collaborate with partners to share existing restoration protocols, Best Management Practices (BMPs) and contract specifications relating to invasive species. Are natural recolonization/succession processes sufficient?

2. Develop a site restoration plan to restore damaged areas (e.g., roads, lawns, boat launches, staging areas, etc.) and ecosystem functions.

> Illustrative Examples of Restoration Efforts
>
> Snakehead fish eradication, Orange County - treated waters were restocked with fish to restore native fish communities.
>
> Oak wilt eradication, Schenectady County - homeowner lawns damaged during tree removal were graded and re-seeded.

3. Identify plant and animal species that should or should not be used within particular ecosystems.

4. Monitor restoration projects to track the control of invasive species and the re-establishment of native species. See Monitoring & Evaluation section item #2.

5. Ensure that restoration projects "do not spread" or "do not establish" invasive species by using appropriate native species to the greatest extent possible.

6. Promote an ecosystem approach to restoration projects.

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